

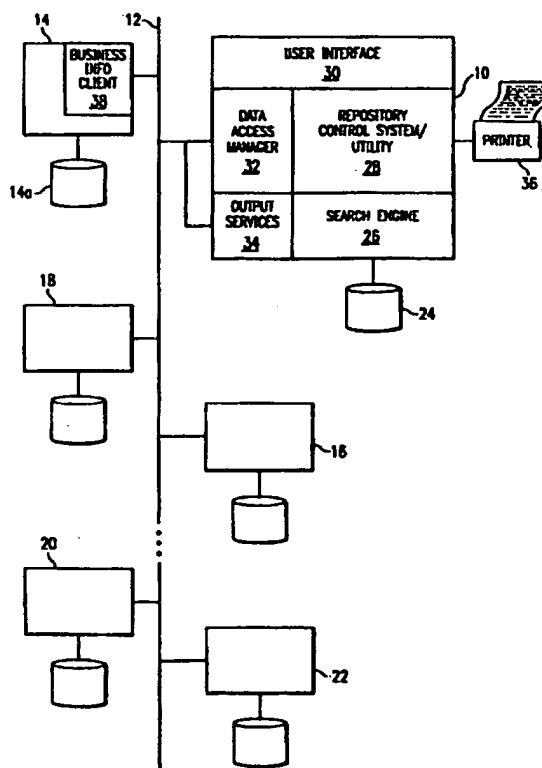


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(54) Title: BUSINESS INFORMATION REPOSITORY SYSTEM AND METHOD OF OPERATION**(57) Abstract**

A business information repository system (10) is provided that is coupled to a distributed network (12). The business information repository system (10) includes a user interface that is coupled to a control system (28). The control system (28) accesses a business information database (65) using a search engine (26). The business information database (65) includes business information including glossaries, graphics, resumes, skills inventories, citations, proposals, customer information and internal corporate profiles, vendor information, standard solutions, and forecasted deal information. Utility functions (56) are provided including a data access manager (32), a forecasting engine (58), a graphics utility (60) and a population engine (62).



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BUSINESS INFORMATION REPOSITORY SYSTEM
AND METHOD OF OPERATION

TECHNICAL FIELD OF THE INVENTION

5 This invention relates in general to the field of
data processing systems and more particularly to a unique
system and method for the storage and retrieval of
business information.

BACKGROUND OF THE INVENTION

In the modern business environment, many transactions involve highly structured bidding processes. These processes are common in contracts which involve public funding, such as work performed for the federal government, as well as large private contracts. In these contexts, the preparation of a written proposal by a company bidding for a contract represents a tremendous amount of work and a correspondingly large expense to the company. Because of the fact that many companies will bid on the same type of work over and over again or will bid for work from the same entity or agency, many proposals contain large amounts of repetitive information. For example, the background of the company, the skills and resumes of key personnel within the company, the background information on the customer as well as many other types of information may be repeated between similar proposals made by a particular company. If the compilation of this shared information must be repeated for each proposal made by a company, this activity represents a significant wasted expense for the company.

Companies which bid on contracts issued by the federal government, for example, are allowed to include within their proposals an allocation of money for bid and proposal activities. In other words, the federal government in effect pays for a certain percentage of the dollars of the money spent by companies in preparing the bids and proposals for federal contracts. As such, if a

company can reduce the amount of time and money spent on the preparation of the compilation of information and preparation of formal proposals for federal contracts, the company can dramatically increase its return on investment and potentially reduce the amount bid for a contract to increase the likelihood that a contract will be awarded to the company. As such, if a company can increase the efficiency in which it can prepare formal bids and proposals for contracts, it can realize more profit and be awarded more contracts. In the past, there has been little effort to use modern data processing technology to compile and store business information which can be used in contract proposals.

Accordingly, a need has arisen for a business information repository and retrieval system that allows for information that can be shared among many proposals to be stored and retrieved using modern data base and data processing techniques.

SUMMARY OF THE INVENTION

Accordingly, a business information repository and retrieval system and method of operation are provided that substantially eliminate and reduce disadvantages and problems associated with prior systems.

According to one embodiment of the present invention, a system is provided that comprises a user interface that is coupled to and interacts with a business information control system. The business information control system accesses business information abstracts using a search engine. Once a particular piece of business information is identified using the business information abstracts, the business information control system can use a data access manager to retrieve the raw data associated with the business information abstract selected.

BRIEF DESCRIPTION OF THE DRAWINGS

A more complete understanding of the advantages of the present invention may be acquired by referring to the accompanying FIGURES in which like reference numbers indicate like features and wherein:

FIGURE 1 is a block diagram of one possible hardware environment for the business information system of the present invention;

FIGURE 2 is a block diagram of one embodiment of the business information system of the present invention;

FIGURE 3 is an entity relationship diagram illustrating the operation of the key word search engine used by the business information system of the present invention;

FIGURE 4 is a flow diagram illustrating the options available to a user operating the search engine of the business information system of the present invention; and

FIGURE 5 is a flow diagram illustrating the operation of the forecasting system and method of the business information system of the present invention.

DETAILED DESCRIPTION OF THE INVENTIONSystem Environment and Operation

FIGURE 1 illustrates a business information repository system 10 which is coupled to a computer network 12. Computer network 12 allows for the transfer of data between repository system 10 and other computer systems 14, 16, 18, 20 and 22 coupled to computer network 12. Network 12 may comprise a variety of network architectures, such as a local area network or a wide area network or other suitable platform for providing communication between the various nodes connected to the network to provide for distributed processing and data storage capability between the various computer systems 10, 14, 16, 18, 20, and 22.

Each of the nodes connected to network 12 manages and controls a data storage capability. For example, computer system 14 uses, manages and controls data storage 14a shown in FIGURE 1. Data storage 14a may comprise a large scale disk storage or tape drive storage system.

Business information repository system 10 also uses a mass storage capability embodied in data storage system 24 shown in FIGURE 1. As will be discussed herein, data storage system 24 is used to store business information abstracts which are accessed by the business information repository system 10 using a search engine 26. The search engine 26 acts under the control of a repository control system and utility 28. The systems within business information repository system 10 may be accessed

by a user through a user interface 30. After a user of system 10 has located a particular piece of business information using the search engine 26 and the business information abstracts stored in data storage system 24, the user can access the raw data associated with the business information system abstract through a data access manager 32. Output from the business information repository system 10 can be routed via electronic mail or suitable data transfer through an output services system 34. In addition, conventional printing control is supplied to drive a conventional printer 36 to print reports and hard copies of business information retrieved from either data storage 24 or from other distributed data storage through computer network 12.

In general, according to the teachings of the present invention, a user of system 10 may use search engine 26 to access business information abstracts stored in data storage system 24. The business information repository system 10 is coupled to a distributed network 12 which allows the system 10 to retrieve the raw data associated with the abstracted data from other data storage facilities connected to the network 12. For example, a user might locate a particular business graphic having a palm print of the graphic stored within data storage system 24. The user could then utilize data access manager 32 to retrieve the actual file containing the full business graphic from data storage system 14a through computer system 14 coupled to network 12.

A user of system 10 may access the repository control system 28 and the search engine 26 through user interface 30 or the business information system 10 may act as a server to other nodes connected to its facilities through network 12. For example, a user of computer system 14 may utilize a business information client system 38 to access the repository control system 28 and thereby access all the functionality of system 10 through a conventional distributed client server relationship between computer system 14 and computer system 10.

Business Information Repository System Architecture

FIGURE 2 is a detailed representation of the architecture of business information repository system 10. As discussed with reference to FIGURE 1, a control system 28 interacts with a user interface 30 to provide access to the operation of system 10. Control system 28 further accesses a data storage system and specifically abstracts of business information stored in data storage system 24. Control system 28 accesses data storage system 24 through a search engine 26. Access to the raw data associated with the abstracts of business information is provided through a data access manager 32 which interfaces with network data 40 which may be stored, for example, on data storage system 14a described previously.

Control system 28 itself comprises a number of components. Control system 28 creates and controls the

user interface 30 using a text manager 42 and a graphics display driver 44. Text manager 42 outputs the characters and font information for all or part of the text information displayed by user interface 30.

5 Graphics display driver 44 similarly outputs the graphic information which is used by the user interface 32 to display information, prompts, screens, etc. to users using the user interface 30. Control system 28 also comprises a security manager 46 which comprises a
10 suitable software system to insure only authorized users have access to the control system 28 and, in turn, to the operation of business information repository system 10. Security manager 46 also acts as a gateway for remote users to access the control system 28. As such, the
15 security manager 46 interfaces with the user interface 30 and with a network interface 48 to monitor and control accesses to the control system 28 that occur through the data access manager 32 from the operation of business information client systems such as business information
20 client system 38 accessing the control system 28 through the network system 12 discussed previously.

The network interface 48 comprises a fully functional interface to network 12 and provides client server access to control system 28. In addition, the
25 network interface 48 provides a gateway for electronic data transfers to and from control system 28. Output of electronic data is controlled through the operation of electronic output service system 50 operating under the control of control system 28 and in communication with

network interface 48. Further, the output of business information can also be directed using electronic mail. This is accomplished under the control of control system 28 through the operation of a mail service system 52 which is also in communication with network interface 48. Mail service 52 may comprise a suitable client routine in communication with an electronic mail server connected to network system 12.

Control system 28 can also provide the output for printed copies of business information. Printing hard copies of information is accomplished by a print service system 54 which operates under the control of control system 28 and communicates with the printer 36 described previously.

The data access manager 32 comprises one of a number of utility functions 56 which operate under the control of control system 28. As described previously, data access manager 32 provides a gateway to distributed data storage and processing capability embodied in network system 12. Other utility functions include a forecasting engine 58, a graphics utility system 60 and a population engine 62. Forecasting engine 58 operates in communication with a forecasting manager 64 which is controlled by control system 28. The operation of forecasting engine 58 and forecasting manager 64 will be described more completely with reference to FIGURE 5. In general, the system 10 of the present invention provides an important capability to not only access stored business information from past transactions associated

with a business entity, but to also use certain portions of the business information to predict, plan and organize efforts to acquire new business in the future. To this end, the forecasting manager 64 and the forecasting engine 58 provide a user of system 10 with planning and scheduling utilities which allow the user to allocate scarce bid and proposal budgets to efficiently respond to future opportunities to make business proposals for new contracts and work.

The graphics utility 60 operates to process data associated with business graphics to create palm prints of the business graphics for storage within data storage system 24. Graphics utility 60 also functions to translate and further process business graphics to enable them to be used in a variety of presentation and document contexts. Graphics represent a large percentage of the costs involved with preparing business documents and as such, their efficient manipulation, storage, retrieval and processing is an important technical advantage of system 10. One embodiment of graphics utility 60 which is ideally suited for the operation of system 10 is described in applicant's patent application entitled "Business Graphics Processing System and Method", filed concurrently with the present patent application, the disclosure of which is hereby incorporated by reference as if fully set forth herein.

Utility functions 56 also comprise a population engine 62. Population engine 62 is used by an administrator of system 10 to examine business

information and to create abstracts of the business information which are then appropriately linked to other abstracts through key word, group, and cross-reference tables 63 associated with the search engine 26. The
5 population engine 62 operates, in the case of textual information, to parse a new piece of business information and to create a list of suggested key words which may be used to index the new piece of information. The
10 population engine 62 also includes the ability to receive from an administrator or other user a short description of the new piece of business information. The population engine 62 also manages the creation of new key words if necessary. After appropriate key words are identified or created and an abstract of the business information is
15 completed, population engine 62 interacts with the control system 28 to incorporate the new abstract of the business information within the relational database managed by the search engine 26.

The search engine 26 uses key word, group, and
20 cross-reference tables 63 to access a large number of business information abstracts stored in storage system 24. FIGURE 2 illustrates the organization of the abstracts stored in data storage system 24 discussed with reference to FIGURE 1. Although the various subdivisions
25 of information are illustrated in FIGURE 2, it should be understood that physically the abstracts may be stored together on a single storage system or on a number of distributed data storage systems.

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